



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Atty. Docket

MAURICE J. CUIJPERS

PHN 16,580

Serial No. 09/179,290

Group Art Unit: 2621

Filed: October 27, 1998

Examiner: A. ALAVI

Title: COMPRESSING AND DECOMPRESSING AN IMAGE

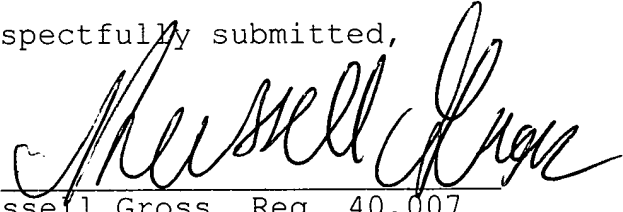
Commissioner for Patents  
Washington, D.C. 20231

Sir:

Enclosed is an original plus two copies of an Appeal  
Brief in the above-identified patent application.

Please charge the fee of \$300.00 to Deposit Account  
No. 14-1270.

Respectfully submitted,

By   
Russell Gross, Reg. 40,007  
Attorney  
(914) 333-9631

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APPEAL BRIEF

Sir:

The rejection of Claims 1-12 is hereby being appealed, which are reproduced in the attached Appendix.

**1. Real Party in Interest**

The real party in interest is U.S. Philips Corporation, the assignee herein.

**2. Related Appeals and Interferences**

The Appellant is not aware of any appeals or interferences that relate to the present application.

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09/03/2001 310.00 CN

**3. Status of all Claims**

Claims 1-12 are currently pending in the present application. Claims 1-12 were submitted in the present application when

originally filed. In the Office Action dated November 9, 2000, Claims 1-12 were finally rejected.

#### **4. Status of Amendment**

No Amendments were filed subsequent to the Final Rejection of November 9, 2000.

#### **5. Summary of the Invention**

The present invention is directed to a method and device of compressing a source image. As can be seen from Figure 2, the method includes dividing each of a set of regions in the source image into groups of image locations according to a similarity of color values of pixel locations of the group in the source image 26, as described on page 5. As described on page 5, a color look-up table is provided and a respective reference to the color look-up table for each group is determined 28.

As further described on page 5, forming a compressed image containing an indication of respective groups to which respective pixels belong and the respective references corresponding to the groups 28. Further, the color look-up table is provided for the source image, all color values of the source image being in the color look-up table, the reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image for at least one image location in the particular group 28, as also described on page 5.

## **6. Issues Presented for Review**

The Appellant respectfully requests that the Board of Appeals review the final rejection of Claims 1-12 under 35 USC 102 as being anticipated by Matsumoto et al. (U.S. Patent No. 5,606,632).

## **7. Grouping of the Claims**

The Appellant respectfully submits that claims 1-12 either stand or fall together.

## **8. Arguments**

Claims 1-12 stand finally rejected under 35 USC 102 as being anticipated by Matsumoto et al. (U.S. Patent No. 5,606,632).

The presently claimed invention is directed to selecting a small number of references to compress a source image into an output image. In the source image, each pixel has a reference to a look-up table. According to the present invention, a small number of references per region are selected by taking the references used in the source image for a small number of representative pixels in the region. This enables the present invention to use the look-up table for the source image to be also used for the output image.

In contrast, Matsumoto et al. discloses putting a number of different input images into different areas of an output image. Therefore, each input image has its own look up table and the output image has yet another look-up table. Based on this, the

Appellant has previously argued that Matsumoto et al. does not teach using the same look-up table for both the source and output image. However, the Examiner did not find these arguments persuasive.

In order to make a proper anticipation rejection under 35 U.S.C. 102, Section 706.02 of The MPEP requires that a reference must teach every aspect of the claimed invention either explicitly or impliedly. Further, in order to establish anticipation, it is incumbent upon the Examiner to identify in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Lindemann Mascinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, (Fed. Cir. 1984).

In view of the above, it is respectfully submitted that the burden of showing that Matsumoto et al. anticipates each and every element recited in the Claims 1-12 has not been met. In particular, Matsumoto et al. neither explicitly nor impliedly teaches "...reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image...", as recited in claims

In making the above rejection, it is stated that in column 1, lines 15-58, Matsumoto et al. does disclose using the same look up table for both the source and output image. In column 1, lines 29-31, Matsumoto et al. discloses that the color system also comprises a single look up where the RGB component values are stored.

Based on the above disclosure, it is evident that Matsumoto et al. only discloses a single look up table for the RGB values. However this does not mean that Matsumoto et al. discloses a single look up table for the source and output image. This interpretation is also supported by the rest of Matsumoto et al., as described below.

In describing the same system, Matsumoto et al., in column 1, lines 43-50, clearly states:


"Color or chrominal information for a first reduced image is loaded up from a first look-up table, following which the first image is displayed in a given region on the screen using the look-up table in the system. Subsequently, color information for a second reduced image is loaded up from a second look-up table. The look up table in the system is again used to display the second image on the screen."

Based on the above disclosure, it is evident that Matsumoto et al. does not disclose does using the same look up table for both the source and output image. Therefore, it is respectfully submitted that the presently recited "...reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image..." is not anticipated by Matsumoto et al.

In view of the above-described distinctions, the Appellant respectfully submits that the invention of Claims 1-12 is not anticipated by Matsumoto et al. Therefore, it is respectfully requested that the final rejection of these claims be reconsidered and reversed.

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Russell Gross, Reg. 40,007  
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On April 3, 2001  
By Edna Chaga



## A P P E N D I X

1. A method of generating image values of an output image, the method comprising the steps of

- defining a subdivision of the output image into regions of image locations,
- providing a color look-up table,
- providing a respective set of references to the color look-up table for each region,
- providing a pixel map comprising a selection code for each image location,
- selecting a particular reference to the color look-up table for a particular image location from the particular set provided for the region to which the particular image location belongs, by using the selection code as a pointer in that particular set,
- wherein the pixel map is constructed by grouping the image locations in each region into groups according to a similarity of color values in a source image, the selection code identifying the group to which the image location belongs among the groups for the region,

wherein the color look-up table is provided for the source image, all color values of the source image being in the color look-up table, the reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image for at least one image location in the particular group.



2. A method according to Claim 1, wherein the reference used for the image locations in the particular group is constructed by selecting a representative image location from the particular group and taking the reference defining the color value for the representative image location in the source image.

3. A method according to Claim 2, wherein the representative image location is selected by determining an image property for each image location in the particular group from the color values in the source image for these image locations in the particular group, and selecting as representative image location an image location for which the image property is a median value among the image properties of the image locations in the particular group.

4. A method according to Claim 3, wherein the representative image location is an image location which has a median value of the image property among the image properties of the image locations in the particular group.

5. A method according to Claim 3, wherein the image property is the luminance of the color value in the source image.

6. A method according to Claim 1, wherein the output location is represents a pyramid of levels of increasingly higher resolution versions of a basic image, each level being sub-divided into regions, the color look-up table being common for all levels, each level being associated with a respective pixel map, the particular reference to the color look-up table being selected for a particular image location at a particular level, from the

particular set provided for the region for that level according to the pixel map for that level.

7. A method according to Claim 6, used for texture mapping in computer graphics, wherein the different resolution levels of a mipmap.

8. A method of compressing a source image, the method comprising

- dividing each of a set of regions in the source image into groups of image locations according to a similarity of color values of pixel locations of the group in the source image,
- providing a color look-up table,
- determining a respective reference to the color look-up table for each group,
- forming a compressed image containing an indication of respective groups to which respective pixels belong and the respective references corresponding to the groups,

wherein the color look-up table is provided for the source image, all color values of the source image being in the color look-up table, the reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image for at least one image location in the particular group.

9. A machine readable medium comprising a program for compressing a source image, the program comprising
- dividing each of a set of regions in the source image into groups of image locations according to a similarity of color values of pixel locations of the group in the source image,
  - providing a color look-up table,
  - determining a respective reference to the color look-up table for each group,
  - forming a compressed image containing an indication of respective groups to which respective pixels belong and the respective references corresponding to the groups,

wherein the color look-up table is provided for the source image, all color values of the source image being in the color look-up table, the reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image for at least one image location in the particular group.

10. A device for compressing a source image, the device comprising
- means for dividing each of a set of regions in the source image into groups of image locations according to a similarity of color values of pixel locations of the group in the source image,
  - means for providing a color look-up table,
  - means for determining a respective reference to the color look-up table for each group,
  - means for forming a compressed image containing an indication of

respective groups to which respective pixels belong and the respective references corresponding to the groups, wherein the color look-up table is provided for the source image, all color values of the source image being in the color look-up table, the reference used for the image locations in a particular group of the pixel map being constructed from at least one reference to the color look-up table which defines the color value in the source image for at least one image location in the particular group.

11. A device as claimed in Claim 10, wherein the reference used for the image locations in the particular group is constructed by selecting a representative image location from the particular group and taking the reference defining the color value for the representative image location in the source image.

12. A device as claimed in claim 11, wherein the representative image location is selected by determining a image property for each image location in the particular group from the color values in the source image for these image locations in the particular group, and selecting as representative image location an image location for which the image property is is a median value among the image properties of the image locations in the particular group.